APPENDIX F

DATA VALIDATION

LABORATORY DATA CONSULTANTS, INC.
7750 El Camino Real, Suite 2L Carlsbad, CA 92009 Phone: 760/634-0437 Fax: 760/634-0439

Foster Wheeler Environmental
143 Union Blvd, Suite 1010
Lakewood, CO 80228
ATTN: Ms. Pam Moss

June 12, 2002

SUBJECT: U.S. Fish & Wildlife Service, Roxanna Marsh, Data Validation

Dear Ms. Moss,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on May 22, 2002. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project # 8476:

SDG #	Fraction
920839, 920866A, 920866B, 920866C	Polynuclear Aromatic Hydrocarbons, Chlorinated Pesticides, Polychlorinated Biphenyls, Metals, Wet Chemistry

The data validation was performed under EPA Level IV guidelines. The analyses were validated using the following documents, as applicable to each method:

- USEPA, Contract Laboratory Program National Functional Guidelines for Organic Data Review, October 1999
- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, February 1994
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996

Please feel free to contact us if you have any questions.

Sincerely,

Richard M. Amano
President/Principal Chemist

Attachment 1

LDC #8476 (Foster Wheeler - Lakewood / U.S. Fish & Wildlife Service, Roxanna Marsh)

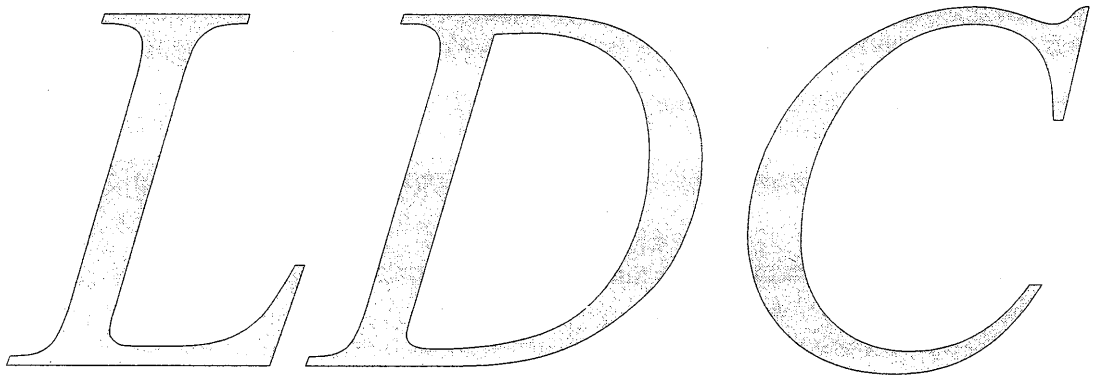
LDC	SDG#	DATE REC'D	DATE DUE	PAHs (8270C)		Pest. (8081A)		PCBs (8082)		Metals (EPA Draft 1629/SW846)		O&G (9071A)		TOC (9060)		AVS-SEM (1629)																							
Matrix: Water/Soil				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	920839	5-22-02	6-13-02	1	22	1	22	1	22	1	22	1	22	1	22	1	22																				
B	920866A	5-22-02	6-13-20	1	20	1	18	1	20	1	18	1	20	1	20	1	20																				
C	920866B	5-22-02	6-13-02	0	22	0	22	0	22	0	22	0	22	0	22	0	22																				
D	920866C	5-22-02	6-13-02	0	10	0	10	0	10	0	10	0	10	0	10	0	10																				
Total	TH			2	74	2	72	2	74	2	72	2	74	2	74	2	74	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Shaded cells indicate Level IV validation (all other cells are Level III validation).

8476ST.FW

USFWS Roxanna Marsh
Data Validation Reports
LDC# 8476

Polynuclear Aromatic Hydrocarbons



Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: USFWS Roxanna Marsh

Collection Date: March 19, 2002

LDC Report Date: May 29, 2002

Matrix: Soil/Water

Parameters: Polynuclear Aromatic Hydrocarbons

Validation Level: EPA Level IV

Laboratory: En Chem Laboratories, Inc.

Sample Delivery Group (SDG): 920839

Sample Identification

FW-RM-15-SS
FW-RM-10-SS
FW-RM-12-SS
FW-RM-16-SS
FW-RM-02-SS
FW-RM-06-SS
FW-RM-05-SS
FW-RM-17-SS
FW-RM-07-SS
FW-RM-08-SS
FW-RM-09-SS
FW-RM-01-SS
FW-RM-04-SS
FW-RM-03-SS
FW-RM-08-CS-2.3-4.4
FW-RM-08-CS-1-2.3
FW-RM-09-CS-1-3.5
FW-RM-09-CS-3.5-4.9
FW-RM-17-CS-0-1.5
FW-RM-RB-01
FW-RM-17-CS-1.5-3.5
FW-RM-01-SSMS
FW-RM-01-SSMSD

Introduction

This data review covers 22 soil samples and one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Polynuclear Aromatic Hydrocarbons.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 15.0% for each individual compound and less than or equal to 30.0% for calibration check compounds (CCCs).

In the case where %RSD was greater than 15.0%, the laboratory used a calibration curve to evaluate the compound. All coefficients of determination (r^2) were greater than or equal to 0.990 .

For the purposes of technical evaluation, all compounds were evaluated against the 30.0% (%RSD) National Functional Guideline criteria. Unless noted above, all compounds were within the validation criteria.

Average relative response factors (RRF) for all polynuclear aromatic hydrocarbon target compounds and system performance check compounds (SPCCs) were greater than or equal to 0.05 as required.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs).

For the purposes of technical evaluation, all compounds were evaluated against the 25.0% (%D) National Functional Guideline criteria. Unless noted above, all compounds were within the validation criteria with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
4/3/02	Pyrene Benzo(g,h,i)perylene	33.78 25.12	FW-RM-15-SS FW-RM-12-SS FW-RM-16-SS FW-RM-02-SS FW-RM-06-SS FW-RM-05-SS FW-RM-17-SS FW-RM-07-SS FW-RM-08-SS FW-RM-09-SS FW-RM-01-SS FW-RM-04-SS FW-RM-03-SS FW-RM-01-SSMS FW-RM-01-SSMSD	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A
4/3/02	Benzo(g,h,i)perylene	25.12	FW-RM-17-CS-0-1.5	J (all detects) UJ (all non-detects)	A
4/4/02	Pyrene	37.74	FW-RM-17-CS-0-1.5	J (all detects) UJ (all non-detects)	A

All of the continuing calibration RRF values were greater than or equal to 0.05 .

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polynuclear aromatic hydrocarbon contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. Surrogate recoveries (%R) were not within QC limits for several samples. Since the samples were diluted out, no data were qualified.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
FW-RM-01-SSMS/MSD (FW-RM-01-SS)	Dibenz(a,h)anthracene Pyrene	156 (39-147) -	150 (39-147) 162 (52-122)	- -	J (all detects) J (all detects)	A

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
MB2920839LCS/D (All water samples in SDG 920839)	Anthracene	-	72 (76-113)	-	J (all detects) UJ (all non-detects)	P

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

XVII. Field Blanks

Sample FW-RM-RB-01 was identified as a rinsate blank. No polynuclear aromatic hydrocarbon contaminants were found in this blank.

USFWS Roxanna Marsh
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG 920839

SDG	Sample	Compound	Flag	A or P	Reason
920839	FW-RM-15-SS FW-RM-12-SS FW-RM-16-SS FW-RM-02-SS FW-RM-06-SS FW-RM-05-SS FW-RM-17-SS FW-RM-07-SS FW-RM-08-SS FW-RM-09-SS FW-RM-01-SS FW-RM-04-SS FW-RM-03-SS FW-RM-17-CS-0-1.5	Pyrene Benzo(g,h,i)perylene	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)
920839	FW-RM-01-SS	Dibenz(a,h)anthracene Pyrene	J (all detects) J (all detects)	A	Matrix spike/Matrix spike duplicates (%R)
920839	FW-RM-RB-01	Anthracene	J (all detects) UJ (all non-detects)	P	Laboratory control samples (%R)

USFWS Roxanna Marsh
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG 920839

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: USFWS Roxanna Marsh

Collection Date: March 19 through March 21, 2002

LDC Report Date: May 29, 2002

Matrix: Soil/Water

Parameters: Polynuclear Aromatic Hydrocarbons

Validation Level: EPA Level IV

Laboratory: En Chem Laboratories, Inc.

Sample Delivery Group (SDG): 920866A

Sample Identification

FW-RM-11-SS
FW-RM-03-CS-2.3-4.8
FW-RM-03-CS-0.8-2.3
FW-RM-20-SS
FW-RM-14-SS
FW-RM-21-SS
FW-RM-19-SS
FW-RM-18-SS
FW-RM-13-SS
FW-RM-RB-02
FW-RM-07-CS-2.6-5.4
FW-RM-07-CS-0.5-2.6
FW-RM-20-CS-0.8-2.4
FW-RM-21-CS-3.6-5.6
FW-RM-01-CS-3.6-5.6
FW-RM-21-CS-7.0-9.0
FW-RM-01-CS-7.0-9.0
FW-RM-03-CS-2.3-4.8MS
FW-RM-03-CS-2.3-4.8MSD
FW-RM-01-CS-1-2
FW-RM-01-CS-2-3.9

Introduction

This data review covers 20 soil samples and one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Polynuclear Aromatic Hydrocarbons.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 15.0% for each individual compound and less than or equal to 30.0% for calibration check compounds (CCCs).

In the case where %RSD was greater than 15.0%, the laboratory used a calibration curve to evaluate the compound. All coefficients of determination (r^2) were greater than or equal to 0.990 .

For the purposes of technical evaluation, all compounds were evaluated against the 30.0% (%RSD) National Functional Guideline criteria. Unless noted above, all compounds were within the validation criteria.

Average relative response factors (RRF) for all polynuclear aromatic hydrocarbon target compounds and system performance check compounds (SPCCs) were greater than or equal to 0.05 as required.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs).

For the purposes of technical evaluation, all compounds were evaluated against the 25.0% (%D) National Functional Guideline criteria. Unless noted above, all compounds were within the validation criteria.

All of the continuing calibration RRF values were greater than or equal to 0.05 .

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polynuclear aromatic hydrocarbon contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. Surrogate recoveries (%R) were not within QC limits for several samples. Since the samples were diluted out, no data were qualified.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
FW-RM-03-CS-2.3-4.8MS/MSD (FW-RM-03-CS-2.3-4.8)	Naphthalene Acenaphthylene Acenaphthene	107 (61-99) 112 (66-104) 112 (62-106)	107 (61-99) 112 (66-104) 109 (62-106)	- - -	J (all detects) J (all detects) J (all detects)	A

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
MB2920866LCS/D (All water samples in SDG 920866A)	Anthracene	-	72 (76-113)	-	J (all detects) UJ (all non-detects)	P

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

Samples FW-RM-21-SS and FW-RM-13-SS, samples FW-RM-21-CS-3.6-5.6 and FW-RM-01-CS-3.6-5.6, and samples FW-RM-21-CS-7.0-9.0 and FW-RM-01-CS-7.0-9.0 were identified as field duplicates. No polynuclear aromatic hydrocarbons were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/Kg)		RPD
	FW-RM-21-SS	FW-RM-13-SS	
Benzo(a)anthracene	2700	3100	14
Benzo(a)pyrene	2600	2900	11
Benzo(b)fluoranthene	8400	9200	9
Benzo(g,h,i)perylene	3200	4600	36
Chrysene	4800	5400	12
Fluoranthene	3300	3400	3
Indeno(1,2,3-cd)pyrene	2900	4300	39
Pyrene	5300	5900	11

Compound	Concentration (ug/Kg)		RPD
	FW-RM-21-CS-3.6-5.6	FW-RM-01-CS-3.6-5.6	
Phenanthrene	410	680	50

Compound	Concentration (ug/Kg)		RPD
	FW-RM-21-CS-7.0-9.0	FW-RM-01-CS-7.0-9.0	
Phenanthrene	210U	250	Not calculable

XVII. Field Blanks

Sample FW-RM-RB-02 was identified as a rinsate blank. No polynuclear aromatic hydrocarbon contaminants were found in this blank.

USFWS Roxanna Marsh
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG 920866A

SDG	Sample	Compound	Flag	A or P	Reason
920866A	FW-RM-03-CS-2.3-4.8	Naphthalene Acenaphthylene Acenaphthene	J (all detects) J (all detects) J (all detects)	A	Matrix spike/Matrix spike duplicates (%R)
920866A	FW-RM-RB-02	Anthracene	J (all detects) UJ (all non-detects)	P	Laboratory control samples (%R)

USFWS Roxanna Marsh
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG 920866A

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: USFWS Roxanna Marsh

Collection Date: March 19 through March 21, 2002

LDC Report Date: May 29, 2002

Matrix: Soil

Parameters: Polynuclear Aromatic Hydrocarbons

Validation Level: EPA Level IV

Laboratory: En Chem Laboratories, Inc.

Sample Delivery Group (SDG): 920866B

Sample Identification

FW-RM-10-CS-1.7-4.0
FW-RM-10-CS-0.7-1.7
FW-RM-13-CS-3.1-6.0
FW-RM-13-CS-1.0-3.1
FW-RM-20-CS-2.4-4.2
FW-RM-20-CS-4.2-6.0
FW-RM-15-CS-3.0-4.6
FW-RM-15-CS-1.2-3.0
FW-RM-12-CS-2.3-5.3
FW-RM-12-CS-1.1-1.9
FW-RM-04-CS-2.7-4.8
FW-RM-04-CS-0.5-2.7
FW-RM-05-CS-3.3-5.9
FW-RM-05-CS-0.7-3.3
FW-RM-02-CS-2.7-5.2
FW-RM-02-CS-0.8-2.7
FW-RM-19-CS-2.0-4.0
FW-RM-19-CS-0.7-2.0
FW-RM-18-CS-0.7-2.3
FW-RM-18-CS-2.3-4.3
FW-RM-10-CS-1.7-4.0MS
FW-RM-10-CS-1.7-4.0MSD

Introduction

This data review covers 22 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Polynuclear Aromatic Hydrocarbons.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XVI.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 15.0% for each individual compound and less than or equal to 30.0% for calibration check compounds (CCCs).

In the case where %RSD was greater than 15.0%, the laboratory used a calibration curve to evaluate the compound. All coefficients of determination (r^2) were greater than or equal to 0.990 .

For the purposes of technical evaluation, all compounds were evaluated against the 30.0% (%RSD) National Functional Guideline criteria. Unless noted above, all compounds were within the validation criteria.

Average relative response factors (RRF) for all polynuclear aromatic hydrocarbon target compounds and system performance check compounds (SPCCs) were greater than or equal to 0.05 as required.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs).

For the purposes of technical evaluation, all compounds were evaluated against the 25.0% (%D) National Functional Guideline criteria. Unless noted above, all compounds were within the validation criteria.

All of the continuing calibration RRF values were greater than or equal to 0.05 .

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polynuclear aromatic hydrocarbon contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. Surrogate recoveries (%R) were not within QC limits for several samples. Since the samples were diluted out, no data were qualified.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
FW-RM-10-CS-1.7-4.0MS/MSD (FW-RM-10-CS-1.7-4.0)	Naphthalene	102 (61-99)	104 (61-99)	-	J (all detects)	A
	Acenaphthylene	110 (66-104)	108 (66-104)	-	J (all detects)	
	Acenaphthene	112 (62-106)	108 (62-106)	-	J (all detects)	

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

XVII. Field Blanks

No field blanks were identified in this SDG.

USFWS Roxanna Marsh
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG 920866B

SDG	Sample	Compound	Flag	A or P	Reason
920866B	FW-RM-10-CS-1.7-4.0	Naphthalene Acenaphthylene Acenaphthene	J (all detects) J (all detects) J (all detects)	A	Matrix spike/Matrix spike duplicates (%R)

USFWS Roxanna Marsh
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG 920866B

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: USFWS Roxanna Marsh

Collection Date: March 21, 2002

LDC Report Date: May 29, 2002

Matrix: Soil

Parameters: Polynuclear Aromatic Hydrocarbons

Validation Level: EPA Level IV

Laboratory: En Chem Laboratories, Inc.

Sample Delivery Group (SDG): 920866C

Sample Identification

FW-RM-16-CS-0.7-2.0
FW-RM-16-CS-2.0-3.5
FW-RM-06-CS-0.7-2.3
FW-RM-06-CS-2.8-4.7
FW-RM-11-CS-0.7-2.4
FW-RM-11-CS-2.4-4.2
FW-RM-14-CS-0.7-2.0
FW-RM-14-CS-2.0-3.8
FW-RM-16-CS-0.7-2.0MS
FW-RM-16-CS-0.7-2.0MSD

Introduction

This data review covers 10 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8270C for Polynuclear Aromatic Hydrocarbons.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A table summarizing all data qualification is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

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The following are definitions of the data qualifiers:

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UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 15.0% for each individual compound and less than or equal to 30.0% for calibration check compounds (CCCs).

In the case where %RSD was greater than 15.0%, the laboratory used a calibration curve to evaluate the compound. All coefficients of determination (r^2) were greater than or equal to 0.990 .

For the purposes of technical evaluation, all compounds were evaluated against the 30.0% (%RSD) National Functional Guideline criteria. Unless noted above, all compounds were within the validation criteria.

Average relative response factors (RRF) for all polynuclear aromatic hydrocarbon target compounds and system performance check compounds (SPCCs) were greater than or equal to 0.05 as required.

IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for calibration check compounds (CCCs).

For the purposes of technical evaluation, all compounds were evaluated against the 25.0% (%D) National Functional Guideline criteria. Unless noted above, all compounds were within the validation criteria.

All of the continuing calibration RRF values were greater than or equal to 0.05 .

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polynuclear aromatic hydrocarbon contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Internal Standards

All internal standard areas and retention times were within QC limits.

XI. Target Compound Identifications

All target compound identifications were within validation criteria.

XII. Compound Quantitation and CRQLs

All compound quantitation and CRQLs were within validation criteria.

XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

XIV. System Performance

The system performance was acceptable.

XV. Overall Assessment

Data flags have been summarized at the end of the report.

XVI. Field Duplicates

No field duplicates were identified in this SDG.

XVII. Field Blanks

No field blanks were identified in this SDG.

USFWS Roxanna Marsh
Polynuclear Aromatic Hydrocarbons - Data Qualification Summary - SDG 920866C

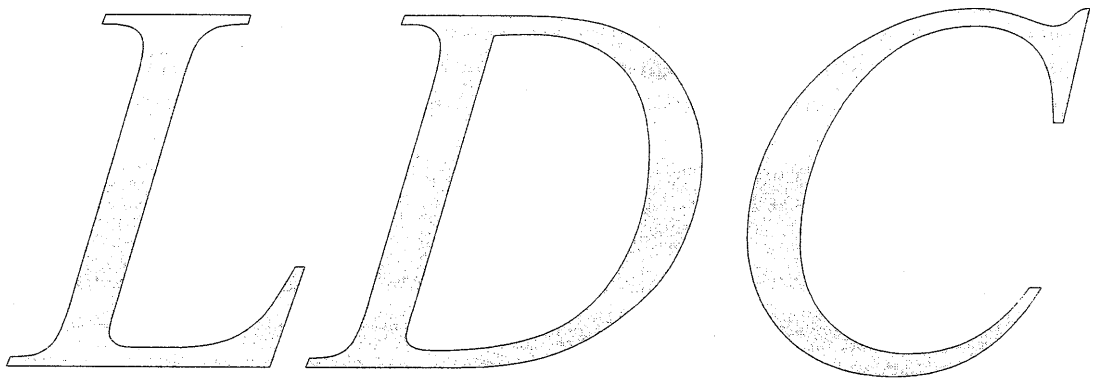
No Sample Data Qualified in this SDG

USFWS Roxanna Marsh
Polynuclear Aromatic Hydrocarbons - Laboratory Blank Data Qualification Summary - SDG 920866C

No Sample Data Qualified in this SDG

USFWS Roxanna Marsh
Data Validation Reports
LDC# 8476

Chlorinated Pesticides



Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: USFWS Roxanna Marsh

Collection Date: March 19, 2002

LDC Report Date: June 1, 2002

Matrix: Soil/Water

Parameters: Chlorinated Pesticides

Validation Level: EPA Level IV

Laboratory: En Chem Laboratories, Inc.

Sample Delivery Group (SDG): 920839

Sample Identification

FW-RM-15-SS
FW-RM-10-SS
FW-RM-12-SS
FW-RM-16-SS
FW-RM-02-SS
FW-RM-06-SS
FW-RM-05-SS
FW-RM-17-SS
FW-RM-07-SS
FW-RM-08-SS
FW-RM-09-SS
FW-RM-01-SS
FW-RM-04-SS
FW-RM-03-SS
FW-RM-08-CS-2.3-4.4
FW-RM-08-CS-1-2.3
FW-RM-09-CS-1-3.5
FW-RM-09-CS-3.5-4.9
FW-RM-17-CS-0-1.5
FW-RM-RB-01
FW-RM-17-CS-1.5-3.5
FW-RM-01-SSMS
FW-RM-01-SSMSD

Introduction

This data review covers 22 soil samples and one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8081A for Chlorinated Pesticides.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XIV.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Compound	Total Days From Sample Collection Until Extraction	Required Holding Time (in Days) From Sample Collection Until Extraction	Flag	A or P
FW-RM-RB-01	All TCL compounds	8	7	J (all detects) UJ (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of single and multicomponent compounds was performed for the primary (quantitation) column and confirmation column as required by this method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Retention time windows were evaluated and considered technically acceptable.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 15.0% QC limits with the following exceptions:

Date	Standard	Column	Compound	%D	Associated Samples	Flag	A or P
4/12/02 (10:57)	B412004	RTX-CLP2	4,4'-DDT	19.02	FW-RM-05-SS FW-RM-17-SS FW-RM-08-CS-2.3-4.4 FW-RM-08-CS-1-2.3 FW-RM-09-CS-1-3.5 FW-RM-09-CS-3.5-4.9 FW-RM-17-CS-0-1.5 FW-RM-17-CS-1.5-3.5 FW-RM-01-SSMS	J (all detects) UJ (all non-detects)	A

Retention times (RT) of all compounds in the calibration standards were within QC limits.

The individual 4,4'-DDT and Endrin breakdowns were less than 15.0% .

V. Blanks

Method blanks were reviewed for each matrix as applicable. No chlorinated pesticide contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Column	Surrogate	%R (Limits)	Compound	Flag	A or P
FW-RM-02-SS	RTX-CLP RTX-CLP2	Decachlorobiphenyl Decachlorobiphenyl	0 (60-155) 0 (60-155)	All TCL compounds	J (all detects) R (all non-detects)	P
FW-RM-06-SS	RTX-CLP RTX-CLP2	Decachlorobiphenyl Decachlorobiphenyl	54 (60-155) 58 (60-155)	All TCL compounds	J (all detects) UJ (all non-detects)	P
FW-RM-07-SS	RTX-CLP2	Decachlorobiphenyl	57 (60-155)	All TCL compounds	J (all detects) UJ (all non-detects)	P
FW-RM-09-SS	RTX-CLP	Decachlorobiphenyl	58 (60-155)	All TCL compounds	J (all detects) UJ (all non-detects)	P
FW-RM-01-SS	RTX-CLP2	Decachlorobiphenyl	0 (60-155)	All TCL compounds	J (all detects) R (all non-detects)	A
FW-RM-03-SS	RTX-CLP RTX-CLP2	Decachlorobiphenyl Decachlorobiphenyl	54 (60-155) 54 (60-155)	All TCL compounds	J (all detects) UJ (all non-detects)	P

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
FW-RM-01-SSMS/MSD (FW-RM-01-SS)	delta-BHC Aldrin Heptachlor	55 (57-118) 42 (49-128) -	- - -	- - 65 (≤38)	J (all detects) UJ (all non-detects)	A

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Pesticide Cleanup Checks

a. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

b. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XI. Target Compound Identification

All target compound identifications were within validation criteria.

XII. Compound Quantitation and Reported CRQLs

All compound quantitation and CRQLs were within validation criteria.

The sample results for detected compounds from the two columns were within 40% difference with the following exceptions:

Sample	Compound	%D	Flag	A or P
FW-RM-15-SS	4,4'-DDE 4,4'-DDT alpha-Chlordane Endosulfan sulfate gamma-Chlordane	75 153 100 189 78	J (all detects) J (all detects) J (all detects) J (all detects) J (all detects)	A
FW-RM-10-SS	4,4'-DDE Dieldrin Endosulfan sulfate gamma-Chlordane	57 193 55 80	J (all detects) J (all detects) J (all detects) J (all detects)	A
FW-RM-12-SS	4,4'-DDT Dieldrin Endosulfan sulfate gamma-BHC gamma-Chlordane	61 56 113 53 46	J (all detects) J (all detects) J (all detects) J (all detects) J (all detects)	A

Sample	Compound	%D	Flag	A or P
FW-RM-16-SS	4,4'-DDE	69	J (all detects)	A
	4,4'-DDT	86	J (all detects)	
	alpha-Chlordane	117	J (all detects)	
	Dieldrin	143	J (all detects)	
	Endosulfan sulfate	111	J (all detects)	
FW-RM-02-SS	4,4'-DDE	54	J (all detects)	A
	4,4'-DDT	85	J (all detects)	
	alpha-Chlordane	135	J (all detects)	
	Endosulfan sulfate	92	J (all detects)	
	gamma-BHC	183	J (all detects)	
	gamma-Chlordane	74	J (all detects)	
FW-RM-06-SS	4,4'-DDE	74	J (all detects)	A
	gamma-Chlordane	108	J (all detects)	
FW-RM-05-SS	gamma-BHC	51	J (all detects)	A
	gamma-Chlordane	45	J (all detects)	
	beta-BHC	176	J (all detects)	
FW-RM-17-SS	Methoxychlor	190	J (all detects)	A
FW-RM-07-SS	4,4'-DDE	52	J (all detects)	A
	Dieldrin	122	J (all detects)	
	Endosulfan sulfate	67	J (all detects)	
	gamma-Chlordane	169	J (all detects)	
FW-RM-08-SS	4,4'-DDE	62	J (all detects)	A
	alpha-Chlordane	146	J (all detects)	
	Endosulfan sulfate	134	J (all detects)	
	gamma-Chlordane	88	J (all detects)	
	Methoxychlor	93	J (all detects)	
FW-RM-09-SS	4,4'-DDE	82	J (all detects)	A
	4,4'-DDT	73	J (all detects)	
	alpha-Chlordane	105	J (all detects)	
	beta-BHC	79	J (all detects)	
	Dieldrin	137	J (all detects)	
	Endosulfan I	77	J (all detects)	
	Endosulfan sulfate	67	J (all detects)	
	gamma-Chlordane	114	J (all detects)	
	Methoxychlor	42	J (all detects)	
FW-RM-01-SS	4,4'-DDD	42	J (all detects)	A
	4,4'-DDE	100	J (all detects)	
	alpha-Chlordane	76	J (all detects)	
	Dieldrin	97	J (all detects)	
	Endosulfan I	150	J (all detects)	
	Endosulfan sulfate	56	J (all detects)	
	gamma-Chlordane	90	J (all detects)	
FW-RM-04-SS	beta-BHC	82	J (all detects)	A

Sample	Compound	%D	Flag	A or P
FW-RM-03-SS	4,4'-DDE alpha-Chlordane Endosulfan sulfate gamma-BHC gamma-Chlordane	50 171 164 75 109	J (all detects) J (all detects) J (all detects) J (all detects) J (all detects)	A
FW-RM-17-CS-0-1.5	4,4'-DDT	96	J (all detects)	A
FW-RM-17-CS-1.5-3.5	4,4'-DDT	82	J (all detects)	A

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

XV. Field Blanks

Sample FW-RM-RB-01 was identified as a rinsate blank. No chlorinated pesticide contaminants were found in this blank.

USFWS Roxanna Marsh
Chlorinated Pesticides - Data Qualification Summary - SDG 920839

SDG	Sample	Compound	Flag	A or P	Reason
920839	FW-RM-RB-01	All TCL compounds	J (all detects) UJ (all non-detects)	P	Technical holding times
920839	FW-RM-05-SS FW-RM-17-SS FW-RM-08-CS-2.3-4.4 FW-RM-08-CS-1-2.3 FW-RM-09-CS-1-3.5 FW-RM-09-CS-3.5-4.9 FW-RM-17-CS-0-1.5 FW-RM-17-CS-1.5-3.5	4,4'-DDT	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)
920839	FW-RM-02-SS	All TCL compounds	J (all detects) R (all non-detects)	P	Surrogate spikes (%R)
920839	FW-RM-01-SS	All TCL compounds	J (all detects) R (all non-detects)	A	Surrogate spikes (%R)
920839	FW-RM-06-SS FW-RM-07-SS FW-RM-09-SS FW-RM-03-SS	All TCL compounds	J (all detects) UJ (all non-detects)	P	Surrogate spikes (%R)
920839	FW-RM-01-SS	delta-BHC Aldrin Heptachlor	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicates (%R)(RPD)
920839	FW-RM-15-SS	4,4'-DDE 4,4'-DDT alpha-Chlordane Endosulfan sulfate gamma-Chlordane	J (all detects) J (all detects) J (all detects) J (all detects) J (all detects)	A	Compound quantitation and CRQLs (%D)
920839	FW-RM-10-SS FW-RM-07-SS	4,4'-DDE Dieldrin Endosulfan sulfate gamma-Chlordane	J (all detects) J (all detects) J (all detects) J (all detects)	A	Compound quantitation and CRQLs (%D)
920839	FW-RM-12-SS	4,4'-DDT Dieldrin Endosulfan sulfate gamma-BHC gamma-Chlordane	J (all detects) J (all detects) J (all detects) J (all detects) J (all detects)	A	Compound quantitation and CRQLs (%D)
920839	FW-RM-16-SS	4,4'-DDE 4,4'-DDT alpha-Chlordane Dieldrin Endosulfan sulfate	J (all detects) J (all detects) J (all detects) J (all detects) J (all detects)	A	Compound quantitation and CRQLs (%D)

SDG	Sample	Compound	Flag	A or P	Reason
920839	FW-RM-02-SS	4,4'-DDE 4,4'-DDT alpha-Chlordane Endosulfan sulfate gamma-BHC gamma-Chlordane	J (all detects) J (all detects) J (all detects) J (all detects) J (all detects) J (all detects)	A	Compound quantitation and CRQLs (%D)
920839	FW-RM-06-SS	4,4'-DDE gamma-Chlordane	J (all detects) J (all detects)	A	Compound quantitation and CRQLs (%D)
920839	FW-RM-05-SS	gamma-BHC gamma-Chlordane beta-BHC	J (all detects) J (all detects) J (all detects)	A	Compound quantitation and CRQLs (%D)
920839	FW-RM-17-SS	Methoxychlor	J (all detects)	A	Compound quantitation and CRQLs (%D)
920839	FW-RM-08-SS	4,4'-DDE alpha-Chlordane Endosulfan sulfate gamma-Chlordane Methoxychlor	J (all detects) J (all detects) J (all detects) J (all detects) J (all detects)	A	Compound quantitation and CRQLs (%D)
920839	FW-RM-09-SS	4,4'-DDE 4,4'-DDT alpha-Chlordane beta-BHC Dieldrin Endosulfan I Endosulfan sulfate gamma-Chlordane Methoxychlor	J (all detects) J (all detects) J (all detects) J (all detects) J (all detects) J (all detects) J (all detects) J (all detects) J (all detects)	A	Compound quantitation and CRQLs (%D)
920839	FW-RM-01-SS	4,4'-DDD 4,4'-DDE alpha-Chlordane Dieldrin Endosulfan I Endosulfan sulfate gamma-Chlordane	J (all detects) J (all detects) J (all detects) J (all detects) J (all detects) J (all detects) J (all detects)	A	Compound quantitation and CRQLs (%D)
920839	FW-RM-04-SS	beta-BHC	J (all detects)	A	Compound quantitation and CRQLs (%D)
920839	FW-RM-03-SS	4,4'-DDE alpha-Chlordane Endosulfan sulfate gamma-BHC gamma-Chlordane	J (all detects) J (all detects) J (all detects) J (all detects) J (all detects)	A	Compound quantitation and CRQLs (%D)
920839	FW-RM-17-CS-0-1.5 FW-RM-17-CS-1.5-3.5	4,4'-DDT	J (all detects)	A	Compound quantitation and CRQLs (%D)

USFWS Roxanna Marsh
Chlorinated Pesticides - Laboratory Blank Data Qualification Summary - SDG 920839

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: USFWS Roxanna Marsh

Collection Date: March 19 through March 21, 2002

LDC Report Date: June 1, 2002

Matrix: Soil/Water

Parameters: Chlorinated Pesticides

Validation Level: EPA Level IV

Laboratory: En Chem Laboratories, Inc.

Sample Delivery Group (SDG): 920866A

Sample Identification

FW-RM-11-SS
FW-RM-03-CS-2.3-4.8
FW-RM-03-CS-0.8-2.3
FW-RM-20-SS
FW-RM-14-SS
FW-RM-21-SS
FW-RM-19-SS
FW-RM-18-SS
FW-RM-13-SS
FW-RM-RB-02
FW-RM-07-CS-2.6-5.4
FW-RM-07-CS-0.5-2.6
FW-RM-20-CS-0.8-2.4
FW-RM-21-CS-3.6-5.6
FW-RM-01-CS-3.6-5.6
FW-RM-21-CS-7.0-9.0
FW-RM-01-CS-7.0-9.0
FW-RM-03-CS-2.3-4.8MS
FW-RM-03-CS-2.3-4.8MSD
FW-RM-01-CS-1-2
FW-RM-01-CS-2-3.9

Introduction

This data review covers 20 soil samples and one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8081A for Chlorinated Pesticides.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XIV.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of single and multicomponent compounds was performed for the primary (quantitation) column and confirmation column as required by this method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Retention time windows were evaluated and considered technically acceptable.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 15.0% QC limits.

Retention times (RT) of all compounds in the calibration standards were within QC limits.

The individual 4,4'-DDT and Endrin breakdowns were less than 15.0% .

V. Blanks

Method blanks were reviewed for each matrix as applicable. No chlorinated pesticide contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Column	Surrogate	%R (Limits)	Compound	Flag	A or P
FW-RM-01-CS-2-3.9	RTX-CLP RTX-CLP2	Decachlorobiphenyl Decachlorobiphenyl	49 (60-155) 51 (60-155)	All TCL compounds	J (all detects) UJ (all non-detects)	P

Sample	Column	Surrogate	%R (Limits)	Compound	Flag	A or P
FW-RM-11-SS	RTX-CLP RTX-CLP2	Decachlorobiphenyl Decachlorobiphenyl	58 (60-155) 57 (60-155)	All TCL compounds	J (all detects) UJ (all non-detects)	P
FW-RM-03-CS-0.8-2.3	RTX-CLP RTX-CLP2	Decachlorobiphenyl Decachlorobiphenyl	53 (60-155) 54 (60-155)	All TCL compounds	J (all detects) UJ (all non-detects)	P
FW-RM-20-SS	RTX-CLP RTX-CLP2	Decachlorobiphenyl Decachlorobiphenyl	0 (60-155) 0 (60-155)	All TCL compounds	J (all detects) R (all non-detects)	P
FW-RM-14-SS	RTX-CLP2	Decachlorobiphenyl	54 (60-155)	All TCL compounds	J (all detects) UJ (all non-detects)	P
FW-RM-21-SS	RTX-CLP RTX-CLP2	Decachlorobiphenyl Decachlorobiphenyl	57 (60-155) 56 (60-155)	All TCL compounds	J (all detects) UJ (all non-detects)	P
FW-RM-19-SS	RTX-CLP2	Decachlorobiphenyl	203 (60-155)	All TCL compounds	J (all detects)	P
FW-RM-18-SS	RTX-CLP RTX-CLP2	Decachlorobiphenyl Decachlorobiphenyl	0 (60-155) 0 (60-155)	All TCL compounds	J (all detects) R (all non-detects)	P
FW-RM-07-CS-2.6-5.4	RTX-CLP	Decachlorobiphenyl	55 (60-155)	All TCL compounds	J (all detects) UJ (all non-detects)	P
FW-RM-07-CS-0.5-2.6	RTX-CLP RTX-CLP2	Decachlorobiphenyl Decachlorobiphenyl	55 (60-155) 57 (60-155)	All TCL compounds	J (all detects) UJ (all non-detects)	P
FW-RM-20-CS-0.8-2.4	RTX-CLP RTX-CLP2	Decachlorobiphenyl Decachlorobiphenyl	57 (60-155) 56 (60-155)	All TCL compounds	J (all detects) UJ (all non-detects)	P
FW-RM-21-CS-3.6-5.6	RTX-CLP	Decachlorobiphenyl	59 (60-155)	All TCL compounds	J (all detects) UJ (all non-detects)	P
FW-RM-01-CS-3.6-5.6	RTX-CLP RTX-CLP2	Decachlorobiphenyl Decachlorobiphenyl	57 (60-155) 57 (60-155)	All TCL compounds	J (all detects) UJ (all non-detects)	P
FW-RM-21-CS-7.0-9.0	RTX-CLP RTX-CLP2	Decachlorobiphenyl Decachlorobiphenyl	58 (60-155) 59 (60-155)	All TCL compounds	J (all detects) UJ (all non-detects)	P
FW-RM-01-CS-7.0-9.0	RTX-CLP RTX-CLP2	Decachlorobiphenyl Decachlorobiphenyl	56 (60-155) 58 (60-155)	All TCL compounds	J (all detects) UJ (all non-detects)	P

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Pesticide Cleanup Checks

a. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

b. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XI. Target Compound Identification

All target compound identifications were within validation criteria.

XII. Compound Quantitation and Reported CRQLs

All compound quantitation and CRQLs were within validation criteria.

The sample results for detected compounds from the two columns were within 40% difference with the following exceptions:

Sample	Compound	%D	Flag	A or P
FW-RM-11-SS	4,4'-DDE	100	J (all detects)	A
FW-RM-20-SS	alpha-Chlordane	43	J (all detects)	A
FW-RM-14-SS	beta-BHC	77	J (all detects)	A
FW-RM-21-SS	4,4'-DDE Endrin ketone	180 74	J (all detects) J (all detects)	A
FW-RM-19-SS	Aldrin Endosulfan I Heptachlor epoxide	123 163 100	J (all detects) J (all detects) J (all detects)	A
FW-RM-18-SS	Endrin ketone	179	J (all detects)	A

Sample	Compound	%D	Flag	A or P
FW-RM-01-CS-1-2	Endosulfan sulfate Endrin gamma-Chlordane Heptachlor epoxide	162 106 71 142	J (all detects) J (all detects) J (all detects) J (all detects)	A

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report.

XIV. Field Duplicates

Samples FW-RM-21-SS and FW-RM-13-SS, samples FW-RM-21-CS-3.6-5.6 and FW-RM-01-CS-3.6-5.6, and samples FW-RM-21-CS-7.0-9.0 and FW-RM-01-CS-7.0-9.0 were identified as field duplicates. No chlorinated pesticides were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/Kg)		RPD
	FW-RM-21-SS	FW-RM-13-SS	
4,4'-DDD	15	17	13
4,4'-DDE	10	56U	Not calculable
beta-BHC	5.5	7.4	29
Endosulfan sulfate	5.7	8.4	38
Endrin ketone	6.8	6.9	1

XV. Field Blanks

Sample FW-RM-RB-02 was identified as a rinsate blank. No chlorinated pesticide contaminants were found in this blank.

USFWS Roxanna Marsh
Chlorinated Pesticides - Data Qualification Summary - SDG 920866A

SDG	Sample	Compound	Flag	A or P	Reason
920866A	FW-RM-01-CS-2-3.9 FW-RM-11-SS FW-RM-03-CS-0.8-2.3 FW-RM-14-SS FW-RM-21-SS FW-RM-07-CS-0.5-2.6 FW-RM-20-CS-0.8-2.4 FW-RM-21-CS-3.6-5.6 FW-RM-01-CS-3.6-5.6 FW-RM-21-CS-7.0-9.0 FW-RM-01-CS-7.0-9.0 FW-RM-07-CS-2.6-5.4	All TCL compounds	J (all detects) UJ (all non-detects)	P	Surrogate spikes (%R)
920866A	FW-RM-20-SS FW-RM-18-SS	All TCL compounds	J (all detects) R (all non-detects)	P	Surrogate spikes (%R)
920866A	FW-RM-19-SS	All TCL compounds	J (all detects)	P	Surrogate spikes (%R)
920866A	FW-RM-11-SS	4,4'-DDE	J (all detects)	A	Compound quantitation and CRQLs (%D)
920866A	FW-RM-20-SS	alpha-Chlordane	J (all detects)	A	Compound quantitation and CRQLs (%D)
920866A	FW-RM-14-SS	beta-BHC	J (all detects)	A	Compound quantitation and CRQLs (%D)
920866A	FW-RM-21-SS	4,4'-DDE Endrin ketone	J (all detects) J (all detects)	A	Compound quantitation and CRQLs (%D)
920866A	FW-RM-19-SS	Aldrin Endosulfan I Heptachlor epoxide	J (all detects) J (all detects) J (all detects)	A	Compound quantitation and CRQLs (%D)
920866A	FW-RM-18-SS	Endrin ketone	J (all detects)	A	Compound quantitation and CRQLs (%D)
920866A	FW-RM-01-CS-1-2	Endosulfan sulfate Endrin gamma-Chlordane Heptachlor epoxide	J (all detects) J (all detects) J (all detects) J (all detects)	A	Compound quantitation and CRQLs (%D)

USFWS Roxanna Marsh
Chlorinated Pesticides - Laboratory Blank Data Qualification Summary - SDG 920866A

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: USFWS Roxanna Marsh

Collection Date: March 19 through March 21, 2002

LDC Report Date: June 1, 2002

Matrix: Soil

Parameters: Chlorinated Pesticides

Validation Level: EPA Level IV

Laboratory: En Chem Laboratories, Inc.

Sample Delivery Group (SDG): 920866B

Sample Identification

FW-RM-10-CS-1.7-4.0	FW-RM-10-CS-1.7-4.0MS
FW-RM-10-CS-0.7-1.7	FW-RM-10-CS-1.7-4.0MSD
FW-RM-13-CS-3.1-6.0	
FW-RM-13-CS-1.0-3.1	
FW-RM-20-CS-2.4-4.2	
FW-RM-20-CS-4.2-6.0	
FW-RM-15-CS-3.0-4.6	
FW-RM-15-CS-1.2-3.0	
FW-RM-12-CS-2.3-5.3	
FW-RM-12-CS-1.1-1.9	
FW-RM-04-CS-2.7-4.8	
FW-RM-04-CS-0.5-2.7	
FW-RM-05-CS-3.3-5.9	
FW-RM-05-CS-0.7-3.3	
FW-RM-02-CS-2.7-5.2	
FW-RM-02-CS-0.8-2.7	
FW-RM-19-CS-2.0-4.0	
FW-RM-19-CS-0.7-2.0	
FW-RM-18-CS-0.7-2.3	
FW-RM-18-CS-2.3-4.3	

Introduction

This data review covers 22 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8081A for Chlorinated Pesticides.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XIV.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of single and multicomponent compounds was performed for the primary (quantitation) column and confirmation column as required by this method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Retention time windows were evaluated and considered technically acceptable.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 15.0% QC limits with the following exceptions:

Date	Standard	Column	Compound	%D	Associated Samples	Flag	A or P
4/12/02 (12:04)	B410062	RTX-CLP2	4,4'-DDT	15.66	FW-RM-12-CS-2.3-5.3 FW-RM-04-CS-2.7-4.8 FW-RM-04-CS-0.5-2.7 FW-RM-05-CS-3.3-5.9 FW-RM-02-CS-2.7-5.2 FW-RM-02-CS-0.8-2.7 FW-RM-19-CS-2.0-4.0 FW-RM-19-CS-0.7-2.0 FW-RM-18-CS-0.7-2.3 FW-RM-18-CS-2.3-4.3	J (all detects) UJ (all non-detects)	A

Retention times (RT) of all compounds in the calibration standards were within QC limits.

The individual 4,4'-DDT and Endrin breakdowns were less than 15.0% .

V. Blanks

Method blanks were reviewed for each matrix as applicable. No chlorinated pesticide contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Column	Surrogate	%R (Limits)	Compound	Flag	A or P
FW-RM-12-CS-2.3-5.3	RTX-CLP RTX-CLP2	Decachlorobiphenyl Decachlorobiphenyl	59 (60-155) 56 (60-155)	All TCL compounds	J (all detects) UJ (all non-detects)	P
FW-RM-19-CS-0.7-2.0	RTX-CLP	Decachlorobiphenyl	33 (60-155)	All TCL compounds	J (all detects) UJ (all non-detects)	P
FW-RM-18-CS-0.7-2.3	RTX-CLP RTX-CLP2	Decachlorobiphenyl Decachlorobiphenyl	0 (60-155) 324 (60-155)	All TCL compounds	J (all detects) R (all non-detects)	P
FW-RM-18-CS-2.3-4.3	RTX-CLP	Decachlorobiphenyl	59 (60-155)	All TCL compounds	J (all detects) UJ (all non-detects)	P

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
FW-RM-10-CS-1.7-4.0MS/MSD (FW-RM-10-CS-1.7-4.0)	alpha-BHC	15 (54-127)	-	137 (≤33)	J (all detects) UJ (all non-detects)	A
	beta-BHC	18 (39-134)	-	121 (≤46)		
	delta-BHC	16 (57-118)	-	133 (≤29)		
	gamma-BHC	16 (57-118)	-	131 (≤38)		
	Aldrin	16 (49-128)	-	131 (≤35)		
	Heptachlor	16 (49-130)	-	133 (≤38)		
	Heptachlor epoxide	16 (46-127)	-	128 (≤40)		
	Endosulfan I	16 (52-130)	-	126 (≤32)		
	Dieldrin	16 (55-124)	-	131 (≤33)		
	4,4'-DDE	17 (43-136)	-	126 (≤30)		
	Endrin	16 (32-159)	-	131 (≤32)		
	Endosulfan II	17 (45-127)	-	126 (≤35)		
	4,4'-DDD	17 (45-139)	-	128 (≤39)		
	Endosulfan sulfate	17 (52-124)	-	126 (≤34)		
	4,4'-DDT	14 (48-141)	-	137 (≤33)		
	Methoxychlor	18 (56-145)	-	131 (≤29)		
	Endrin ketone	18 (34-164)	-	125 (≤44)		
	alpha-Chlordane	16 (39-128)	-	128 (≤46)		
	gamma-Chlordane	17 (50-130)	-	124 (≤40)		

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Flag	A or P
920866B-LCS/LCSD (All samples in SDG 920866B)	alpha-BHC	-	12 (55-138)	150 (≤40)	J (all detects) UJ (all non-detects)	P
	beta-BHC	-	13 (42-139)	150 (≤40)		
	delta-BHC	-	12 (29-143)	153 (≤40)		
	gamma-BHC	-	13 (41-141)	150 (≤40)		
	Aldrin	-	13 (40-153)	150 (≤40)		
	Heptachlor	-	14 (38-145)	143 (≤40)		
	Heptachlor epoxide	-	14 (40-136)	146 (≤40)		
	Endosulfan I	-	14 (41-140)	143 (≤40)		
	Dieldrin	-	14 (40-138)	146 (≤40)		
	4,4'-DDE	-	14 (47-138)	146 (≤40)		
	Endrin	-	14 (35-139)	146 (≤40)		
	Endosulfan II	-	14 (38-136)	147 (≤40)		
	4,4'-DDD	-	14 (43-141)	146 (≤40)		
	Endosulfan sulfate	-	14 (22-142)	146 (≤40)		
	4,4'-DDT	-	12 (40-152)	153 (≤40)		
	Methoxychlor	-	14 (24-166)	146 (≤40)		
	Endrin ketone	-	16 (46-156)	142 (≤40)		
	alpha-Chlordane	-	12 (37-131)	150 (≤40)		
	gamma-Chlordane	-	14 (43-141)	143 (≤40)		

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Pesticide Cleanup Checks

a. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

b. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XI. Target Compound Identification

All target compound identifications were within validation criteria.

XII. Compound Quantitation and Reported CRQLs

All compound quantitation and CRQLs were within validation criteria.

The sample results for detected compounds from the two columns were within 40% difference with the following exceptions:

Sample	Compound	%D	Flag	A or P
FW-RM-12-CS-1.1-1.9	4,4'-DDT Endosulfan sulfate	158 142	J (all detects) J (all detects)	A
FW-RM-04-CS-0.5-2.7	4,4'-DDT 4,4'-DDE	52 69	J (all detects) J (all detects)	A
FW-RM-02-CS-0.8-2.7	gamma-Chlordane	89	J (all detects)	A
FW-RM-19-CS-0.7-2.0	4,4'-DDD 4,4'-DDT Endrin Endrin ketone gamma-Chlordane Heptachlor epoxide	60 186 65 75 60 74	J (all detects) J (all detects) J (all detects) J (all detects) J (all detects) J (all detects)	A
FW-RM-18-CS-0.7-2.3	4,4'-DDD Endosulfan II Endosulfan sulfate gamma-Chlordane	136 47 181 129	J (all detects) J (all detects) J (all detects) J (all detects)	A

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

XV. Field Blanks

No field blanks were identified in this SDG.

USFWS Roxanna Marsh
Chlorinated Pesticides - Data Qualification Summary - SDG 920866B

SDG	Sample	Compound	Flag	A or P	Reason
920866B	FW-RM-12-CS-2.3-5.3 FW-RM-04-CS-2.7-4.8 FW-RM-04-CS-0.5-2.7 FW-RM-05-CS-3.3-5.9 FW-RM-02-CS-2.7-5.2 FW-RM-02-CS-0.8-2.7 FW-RM-19-CS-2.0-4.0 FW-RM-19-CS-0.7-2.0 FW-RM-18-CS-0.7-2.3 FW-RM-18-CS-2.3-4.3	4,4'-DDT	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)
920866B	FW-RM-12-CS-2.3-5.3 FW-RM-19-CS-0.7-2.0 FW-RM-18-CS-2.3-4.3	All TCL compounds	J (all detects) UJ (all non-detects)	P	Surrogate spikes (%R)
920866B	FW-RM-18-CS-0.7-2.3	All TCL compounds	J (all detects) R (all non-detects)	P	Surrogate spikes (%R)
920866B	FW-RM-10-CS-1.7-4.0	alpha-BHC beta-BHC delta-BHC gamma-BHC Aldrin Heptachlor Heptachlor epoxide Endosulfan I Dieldrin 4,4'-DDE Endrin Endosulfan II 4,4'-DDD Endosulfan sulfate 4,4'-DDT Methoxychlor Endrin ketone alpha-Chlordane gamma-Chlordane	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicates (%R)(RPD)

SDG	Sample	Compound	Flag	A or P	Reason
920866B	FW-RM-10-CS-1.7-4.0 FW-RM-10-CS-0.7-1.7 FW-RM-13-CS-3.1-6.0 FW-RM-13-CS-1.0-3.1 FW-RM-20-CS-2.4-4.2 FW-RM-20-CS-4.2-6.0 FW-RM-15-CS-3.0-4.6 FW-RM-15-CS-1.2-3.0 FW-RM-12-CS-2.3-5.3 FW-RM-12-CS-1.1-1.9 FW-RM-04-CS-2.7-4.8 FW-RM-04-CS-0.5-2.7 FW-RM-05-CS-3.3-5.9 FW-RM-05-CS-0.7-3.3 FW-RM-02-CS-2.7-5.2 FW-RM-02-CS-0.8-2.7 FW-RM-19-CS-2.0-4.0 FW-RM-19-CS-0.7-2.0 FW-RM-18-CS-0.7-2.3 FW-RM-18-CS-2.3-4.3	alpha-BHC beta-BHC delta-BHC gamma-BHC Aldrin Heptachlor Heptachlor epoxide Endosulfan I Dieldrin 4,4'-DDE Endrin Endosulfan II 4,4'-DDD Endosulfan sulfate 4,4'-DDT Methoxychlor Endrin ketone alpha-Chlordane gamma-Chlordane	J (all detects) UJ (all non-detects)	P	Laboratory control samples (%R)(RPD)
920866B	FW-RM-12-CS-1.1-1.9	4,4'-DDT Endosulfan sulfate	J (all detects) J (all detects)	A	Compound quantitation and CRQLs (%D)
920866B	FW-RM-04-CS-0.5-2.7	4,4'-DDT 4,4'-DDE	J (all detects) J (all detects)	A	Compound quantitation and CRQLs (%D)
920866B	FW-RM-02-CS-0.8-2.7	gamma-Chlordane	J (all detects)	A	Compound quantitation and CRQLs (%D)
920866B	FW-RM-19-CS-0.7-2.0	4,4'-DDD 4,4'-DDT Endrin Endrin ketone gamma-Chlordane Heptachlor epoxide	J (all detects) J (all detects) J (all detects) J (all detects) J (all detects) J (all detects)	A	Compound quantitation and CRQLs (%D)
920866B	FW-RM-18-CS-0.7-2.3	4,4'-DDD Endosulfan II Endosulfan sulfate gamma-Chlordane	J (all detects) J (all detects) J (all detects) J (all detects)	A	Compound quantitation and CRQLs (%D)

USFWS Roxanna Marsh
Chlorinated Pesticides - Laboratory Blank Data Qualification Summary - SDG 920866B

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: USFWS Roxanna Marsh

Collection Date: March 21, 2002

LDC Report Date: June 1, 2002

Matrix: Soil

Parameters: Chlorinated Pesticides

Validation Level: EPA Level IV

Laboratory: En Chem Laboratories, Inc.

Sample Delivery Group (SDG): 920866C

Sample Identification

FW-RM-16-CS-0.7-2.0
FW-RM-16-CS-2.0-3.5
FW-RM-06-CS-0.7-2.3
FW-RM-06-CS-2.8-4.7
FW-RM-11-CS-0.7-2.4
FW-RM-11-CS-2.4-4.2
FW-RM-14-CS-0.7-2.0
FW-RM-14-CS-2.0-3.8
FW-RM-16-CS-0.7-2.0MS
FW-RM-16-CS-0.7-2.0MSD

Introduction

This data review covers 10 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8081A for Chlorinated Pesticides.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XIV.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of single and multicomponent compounds was performed for the primary (quantitation) column and confirmation column as required by this method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Retention time windows were evaluated and considered technically acceptable.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 15.0% QC limits with the following exceptions:

Date	Standard	Column	Compound	%D	Associated Samples	Flag	A or P
4/12/02 (22:15)	A410076	RTX-CLP	Endosulfan I	18.14	All samples in SDG 920866C	J (all detects) UJ (all non-detects)	A
4/12/02 (22:15)	B410076	RTX-CLP2	Endosulfan II 4,4'-DDT	15.06 17.30	All samples in SDG 920866C	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A

Retention times (RT) of all compounds in the calibration standards were within QC limits.

The individual 4,4'-DDT and Endrin breakdowns were less than 15.0% .

V. Blanks

Method blanks were reviewed for each matrix as applicable. No chlorinated pesticide contaminants were found in the method blanks.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Pesticide Cleanup Checks

a. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

b. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XI. Target Compound Identification

All target compound identifications were within validation criteria.

XII. Compound Quantitation and Reported CRQLs

All compound quantitation and CRQLs were within validation criteria.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

XV. Field Blanks

No field blanks were identified in this SDG.

USFWS Roxanna Marsh
Chlorinated Pesticides - Data Qualification Summary - SDG 920866C

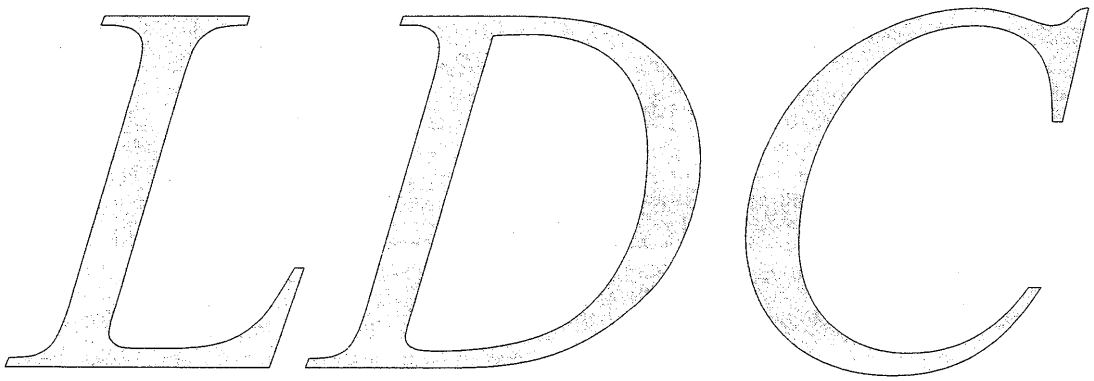
SDG	Sample	Compound	Flag	A or P	Reason
920866C	FW-RM-16-CS-0.7-2.0 FW-RM-16-CS-2.0-3.5 FW-RM-06-CS-0.7-2.3 FW-RM-06-CS-2.8-4.7 FW-RM-11-CS-0.7-2.4 FW-RM-11-CS-2.4-4.2 FW-RM-14-CS-0.7-2.0 FW-RM-14-CS-2.0-3.8	Endosulfan I Endosulfan II 4,4'-DDT	J (all detects) UJ (all non-detects)	A	Continuing calibration (%D)

USFWS Roxanna Marsh
Chlorinated Pesticides - Laboratory Blank Data Qualification Summary - SDG 920866C

No Sample Data Qualified in this SDG

USFWS Roxanna Marsh
Data Validation Reports
LDC# 8476

Polychlorinated Biphenyls



Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: USFWS Roxanna Marsh

Collection Date: March 19, 2002

LDC Report Date: May 29, 2002

Matrix: Soil/Water

Parameters: Polychlorinated Biphenyls

Validation Level: EPA Level IV

Laboratory: En Chem Laboratories, Inc.

Sample Delivery Group (SDG): 920839

Sample Identification

FW-RM-15-SS
FW-RM-10-SS
FW-RM-12-SS
FW-RM-16-SS
FW-RM-02-SS
FW-RM-06-SS
FW-RM-05-SS
FW-RM-17-SS
FW-RM-07-SS
FW-RM-08-SS
FW-RM-09-SS
FW-RM-01-SS
FW-RM-04-SS
FW-RM-03-SS
FW-RM-08-CS-2.3-4.4
FW-RM-08-CS-1-2.3
FW-RM-09-CS-1-3.5
FW-RM-09-CS-3.5-4.9
FW-RM-17-CS-0-1.5
FW-RM-RB-01
FW-RM-17-CS-1.5-3.5
FW-RM-01-SSMS
FW-RM-01-SSMSD

Introduction

This data review covers 22 soil samples and one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082 for Polychlorinated Biphenyls.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XIV.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met with the following exceptions:

Sample	Compound	Total Days From Sample Collection Until Extraction	Required Holding Time (in Days) From Sample Collection Until Extraction	Flag	A or P
FW-RM-RB-01	All TCL compounds	8	7	J (all detects) UJ (all non-detects)	P

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of multicomponent compounds was performed for the primary (quantitation) column as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Retention time windows were evaluated and considered technically acceptable.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 15.0% QC limits with the following exceptions:

Date	Standard	Column	Compound	%D	Associated Samples	Affected Compound	Flag	A or P
4/11/02 (20:38)	A410049	DB-5	Aroclor-1016-1 Aroclor-1016-2 Aroclor-1016-3 Aroclor-1016-4 Aroclor-1016-5 Aroclor-1016-6 Aroclor-1260-2 Aroclor-1260-3 Aroclor-1260-4 Aroclor-1260-5 Aroclor-1260-6 Aroclor-1260-7	19.57 16.16 29.29 22.23 21.08 20.96 29.26 30.25 25.39 28.96 26.99 25.08	FW-RM-17-CS-1.5-3.5 FW-RM-01-SSMSD	All TCL compounds	J (all detects) UJ (all non-detects)	P

Retention times (RT) of all compounds in the calibration standards were within QC limits.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyl contaminants were found in the method blanks.

Sample FW-RM-RB-01 was identified as a rinsate blank. No polychlorinated biphenyl contaminants were found in this blank.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Column	Surrogate	%R (Limits)	Compound	Flag	A or P
FW-RM-04-SS	DB-5	Tetrachloro-m-xylene Decachlorobiphenyl	222 (33-113) 327 (34-131)	All TCL compounds	J (all detects)	P

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Pesticide Cleanup Checks

a. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

b. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XI. Target Compound Identification

All target compound identifications were within validation criteria.

XII. Compound Quantitation and Reported CRQLs

All compound quantitation and CRQLs were within validation criteria.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

USFWS Roxanna Marsh
Polychlorinated Biphenyls - Data Qualification Summary - SDG 920839

SDG	Sample	Compound	Flag	A or P	Reason
920839	FW-RM-RB-01	All TCL compounds	J (all detects) UJ (all non-detects)	P	Technical holding times
920839	FW-RM-17-CS-1.5-3.5	All TCL compounds	J (all detects) UJ (all non-detects)	P	Continuing calibration (%D)
920839	FW-RM-04-SS	All TCL compounds	J (all detects)	P	Surrogate spikes (%R)

USFWS Roxanna Marsh
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 920839

No Sample Data Qualified in this SDG

USFWS Roxanna Marsh
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 920839

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: USFWS Roxanna Marsh

Collection Date: March 19 through March 21, 2002

LDC Report Date: May 29, 2002

Matrix: Soil/Water

Parameters: Polychlorinated Biphenyls

Validation Level: EPA Level IV

Laboratory: En Chem Laboratories, Inc.

Sample Delivery Group (SDG): 920866A

Sample Identification

FW-RM-11-SS
FW-RM-03-CS-2.3-4.8
FW-RM-03-CS-0.8-2.3
FW-RM-20-SS
FW-RM-14-SS
FW-RM-21-SS
FW-RM-19-SS
FW-RM-18-SS
FW-RM-13-SS
FW-RM-RB-02
FW-RM-07-CS-2.6-5.4
FW-RM-07-CS-0.5-2.6
FW-RM-20-CS-0.8-2.4
FW-RM-21-CS-3.6-5.6
FW-RM-01-CS-3.6-5.6
FW-RM-21-CS-7.0-9.0
FW-RM-01-CS-7.0-9.0
FW-RM-03-CS-2.3-4.8MS
FW-RM-03-CS-2.3-4.8MSD
FW-RM-01-CS-1-2
FW-RM-01-CS-2-3.9

Introduction

This data review covers 20 soil samples and one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082 for Polychlorinated Biphenyls.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XIV.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of multicomponent compounds was performed for the primary (quantitation) column as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Retention time windows were evaluated and considered technically acceptable.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 15.0% QC limits with the following exceptions:

Date	Standard	Column	Compound	%D	Associated Samples	Affected Compound	Flag	A or P
4/11/02 (20:38)	A410049	DB-5	Aroclor-1016-1 Aroclor-1016-2 Aroclor-1016-3 Aroclor-1016-4 Aroclor-1016-5 Aroclor-1016-6 Aroclor-1260-2 Aroclor-1260-3 Aroclor-1260-4 Aroclor-1260-5 Aroclor-1260-6 Aroclor-1260-7	19.57 16.16 29.29 22.23 21.08 20.96 29.26 30.25 25.39 28.96 26.99 25.08	FW-RM-01-CS-1-2 FW-RM-01-CS-2-3.9	All TCL compounds	J (all detects) UJ (all non-detects)	P

Date	Standard	Column	Compound	%D	Associated Samples	Affected Compound	Flag	A or P
4/12/02 (1:04)	A410055	DB-5	Aroclor-1016-1	16.17	FW-RM-11-SS	All TCL compounds	J (all detects) UJ (all non-detects)	P
			Aroclor-1016-3	27.73	FW-RM-03-CS-2.3-4.8			
			Aroclor-1016-4	18.57	FW-RM-03-CS-0.8-2.3			
			Aroclor-1016-5	18.14	FW-RM-20-SS			
			Aroclor-1016-6	18.32	FW-RM-14-SS			
			Aroclor-1260-2	25.97	FW-RM-21-SS			
			Aroclor-1260-3	28.76	FW-RM-19-SS			
			Aroclor-1260-4	23.22	FW-RM-18-SS			
			Aroclor-1260-5	27.14	FW-RM-03-CS-2.3-4.8MS			
			Aroclor-1260-6	26.03	FW-RM-03-CS-2.3-4.8MSD			
			Aroclor-1260-7	24.36				

Retention times (RT) of all compounds in the calibration standards were within QC limits.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyl contaminants were found in the method blanks.

Sample FW-RM-RB-02 was identified as a rinsate blank. No polychlorinated biphenyl contaminants were found in this blank.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. Surrogate recoveries (%R) were not within QC limits for samples FW-RM-19-SS and FW-RM-18-SS. Since the samples were diluted out, no data were qualified.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Pesticide Cleanup Checks

a. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

b. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XI. Target Compound Identification

All target compound identifications were within validation criteria.

XII. Compound Quantitation and Reported CRQLs

All compound quantitation and CRQLs were within validation criteria.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report.

XIV. Field Duplicates

Samples FW-RM-21-SS and FW-RM-13-SS, samples FW-RM-21-CS-3.6-5.6 and FW-RM-01-CS-3.6-5.6, and samples FW-RM-21-CS-7.0-9.0 and FW-RM-01-CS-7.0-9.0 were identified as field duplicates. No polychlorinated biphenyls were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/Kg)		RPD
	FW-RM-21-SS	FW-RM-13-SS	
Aroclor-1248	1000	1100	10
Aroclor-1254	940	1100	16
Aroclor-1260	540	590	9

USFWS Roxanna Marsh
Polychlorinated Biphenyls - Data Qualification Summary - SDG 920866A

SDG	Sample	Compound	Flag	A or P	Reason
920866A	FW-RM-11-SS FW-RM-03-CS-2.3-4.8 FW-RM-03-CS-0.8-2.3 FW-RM-20-SS FW-RM-14-SS FW-RM-21-SS FW-RM-19-SS FW-RM-18-SS FW-RM-01-CS-1-2 FW-RM-01-CS-2-3.9	All TCL compounds	J (all detects) UJ (all non-detects)	P	Continuing calibration (%D)

USFWS Roxanna Marsh
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 920866A

No Sample Data Qualified in this SDG

USFWS Roxanna Marsh
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 920866A

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: USFWS Roxanna Marsh

Collection Date: March 19 through March 21, 2002

LDC Report Date: May 29, 2002

Matrix: Soil

Parameters: Polychlorinated Biphenyls

Validation Level: EPA Level IV

Laboratory: En Chem Laboratories, Inc.

Sample Delivery Group (SDG): 920866B

Sample Identification

FW-RM-10-CS-1.7-4.0	FW-RM-10-CS-1.7-4.0MS
FW-RM-10-CS-0.7-1.7	FW-RM-10-CS-1.7-4.0MSD
FW-RM-13-CS-3.1-6.0	
FW-RM-13-CS-1.0-3.1	
FW-RM-20-CS-2.4-4.2	
FW-RM-20-CS-4.2-6.0	
FW-RM-15-CS-3.0-4.6	
FW-RM-15-CS-1.2-3.0	
FW-RM-12-CS-2.3-5.3	
FW-RM-12-CS-1.1-1.9	
FW-RM-04-CS-2.7-4.8	
FW-RM-04-CS-0.5-2.7	
FW-RM-05-CS-3.3-5.9	
FW-RM-05-CS-0.7-3.3	
FW-RM-02-CS-2.7-5.2	
FW-RM-02-CS-0.8-2.7	
FW-RM-19-CS-2.0-4.0	
FW-RM-19-CS-0.7-2.0	
FW-RM-18-CS-0.7-2.3	
FW-RM-18-CS-2.3-4.3	

Introduction

This data review covers 22 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082 for Polychlorinated Biphenyls.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XIV.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of multicomponent compounds was performed for the primary (quantitation) column as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Retention time windows were evaluated and considered technically acceptable.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 15.0% QC limits with the following exceptions:

Date	Standard	Column	Compound	%D	Associated Samples	Affected Compound	Flag	A or P
4/18/02 (20:31)	A417040	DB-5	Aroclor-1016-1 Aroclor-1016-2 Aroclor-1016-3 Aroclor-1016-4 Aroclor-1016-5 Aroclor-1016-7	17.94 21.90 20.82 21.01 19.15 15.76	FW-RM-05-CS-0.7-3.3 FW-RM-02-CS-2.7-5.2 FW-RM-02-CS-0.8-2.7 FW-RM-19-CS-2.0-4.0 FW-RM-19-CS-0.7-2.0 FW-RM-18-CS-0.7-2.3 FW-RM-18-CS-2.3-4.3	Aroclor-1016 Aroclor-1221 Aroclor-1232	J (all detects) UJ (all non-detects)	P

Retention times (RT) of all compounds in the calibration standards were within QC limits.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyl contaminants were found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Pesticide Cleanup Checks

a. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

b. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XI. Target Compound Identification

All target compound identifications were within validation criteria.

XII. Compound Quantitation and Reported CRQLs

All compound quantitation and CRQLs were within validation criteria.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

USFWS Roxanna Marsh
Polychlorinated Biphenyls - Data Qualification Summary - SDG 920866B

SDG	Sample	Compound	Flag	A or P	Reason
920866B	FW-RM-05-CS-0.7-3.3 FW-RM-02-CS-2.7-5.2 FW-RM-02-CS-0.8-2.7 FW-RM-19-CS-2.0-4.0 FW-RM-19-CS-0.7-2.0 FW-RM-18-CS-0.7-2.3 FW-RM-18-CS-2.3-4.3	Aroclor-1016 Aroclor-1221 Aroclor-1232	J (all detects) UJ (all non-detects)	P	Continuing calibration (%D)

USFWS Roxanna Marsh
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 920866B

No Sample Data Qualified in this SDG

USFWS Roxanna Marsh
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 920866B

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: USFWS Roxanna Marsh

Collection Date: March 21, 2002

LDC Report Date: May 30, 2002

Matrix: Soil

Parameters: Polychlorinated Biphenyls

Validation Level: EPA Level IV

Laboratory: En Chem Laboratories, Inc.

Sample Delivery Group (SDG): 920866C

Sample Identification

FW-RM-16-CS-0.7-2.0
FW-RM-16-CS-2.0-3.5
FW-RM-06-CS-0.7-2.3
FW-RM-06-CS-2.8-4.7
FW-RM-11-CS-0.7-2.4
FW-RM-11-CS-2.4-4.2
FW-RM-14-CS-0.7-2.0
FW-RM-14-CS-2.0-3.8
FW-RM-16-CS-0.7-2.0MS
FW-RM-16-CS-0.7-2.0MSD

Introduction

This data review covers 10 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8082 for Polychlorinated Biphenyls.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review (October 1999) as there are no current guidelines for the method stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Blank results are summarized in Section V.

Field duplicates are summarized in Section XIV.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. GC/ECD Instrument Performance Check

Instrument performance was acceptable unless noted otherwise under initial calibration and continuing calibration sections.

III. Initial Calibration

Initial calibration of multicomponent compounds was performed for the primary (quantitation) column as required by the method.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

Retention time windows were evaluated and considered technically acceptable.

IV. Continuing Calibration

Continuing calibration was performed at required frequencies.

The percent differences (%D) of calibration factors in continuing standard mixtures were within the 15.0% QC limits.

Retention times (RT) of all compounds in the calibration standards were within QC limits.

V. Blanks

Method blanks were reviewed for each matrix as applicable. No polychlorinated biphenyl contaminants were found in the method blanks.

No field blanks were identified in this SDG.

VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

IX. Regional Quality Assurance and Quality Control

Not applicable.

X. Pesticide Cleanup Checks

a. Florisil Cartridge Check

Florisil cleanup was not required and therefore not performed in this SDG.

b. GPC Calibration

GPC cleanup was not required and therefore not performed in this SDG.

XI. Target Compound Identification

All target compound identifications were within validation criteria.

XII. Compound Quantitation and Reported CRQLs

All compound quantitation and CRQLs were within validation criteria.

XIII. Overall Assessment of Data

Data flags are summarized at the end of this report.

XIV. Field Duplicates

No field duplicates were identified in this SDG.

USFWS Roxanna Marsh
Polychlorinated Biphenyls - Data Qualification Summary - SDG 920866C

No Sample Data Qualified in this SDG

USFWS Roxanna Marsh
Polychlorinated Biphenyls - Laboratory Blank Data Qualification Summary - SDG 920866C

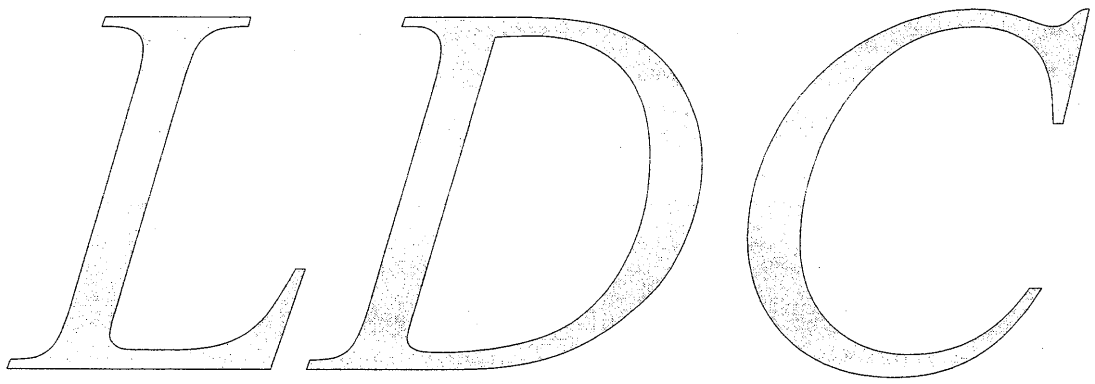
No Sample Data Qualified in this SDG

USFWS Roxanna Marsh
Polychlorinated Biphenyls - Field Blank Data Qualification Summary - SDG 920866C

No Sample Data Qualified in this SDG

USFWS Roxanna Marsh
Data Validation Reports
LDC# 8476

Metals



Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: USFWS Roxanna Marsh

Collection Date: March 19, 2002

LDC Report Date: June 5, 2002

Matrix: Soil/Water

Parameters: Metals

Validation Level: EPA Level IV

Laboratory: En Chem Laboratories, Inc.

Sample Delivery Group (SDG): 920839

Sample Identification

FW-RM-15-SS
FW-RM-10-SS
FW-RM-12-SS
FW-RM-16-SS
FW-RM-02-SS
FW-RM-06-SS
FW-RM-05-SS
FW-RM-17-SS
FW-RM-07-SS
FW-RM-08-SS
FW-RM-09-SS
FW-RM-01-SS
FW-RM-04-SS
FW-RM-03-SS
FW-RM-08-CS-2.3-4.4
FW-RM-08-CS-1-2.3
FW-RM-09-CS-1-3.5
FW-RM-09-CS-3.5-4.9
FW-RM-17-CS-0-1.5
FW-RM-RB-01
FW-RM-17-CS-1.5-3.5
FW-RM-01-SSMS
FW-RM-01-SSMSD

Introduction

This data review covers 22 soil samples and one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6010 and 7000 for Metals. The metals analyzed were Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium, and Silver.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the methods stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from specified protocols or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable.

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. No contaminant concentrations were found in the initial, continuing and preparation blanks.

IV. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

V. Matrix Spike Analysis

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
FW-RM-01-SSMS/MSD (All soil samples in SDG 920839)	Lead	-	45.4 (75-125)	-	J (all detects) UJ (all non-detects)	A
FW-RM-01-SSMS/MSD (All soil samples in SDG 920839)	Mercury	132.1 (63-131)	-	-	J (all detects)	A

VI. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Internal Standard (ICP-MS)

ICP-MS was not utilized in this SDG.

IX. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

X. ICP Serial Dilution

ICP serial dilution was not required by the method.

XI. Sample Result Verification

All sample result verifications met validation criteria.

XII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

XIII. Field Duplicates

No field duplicates were identified in this SDG.

XIV. Field Blanks

Sample FW-RM-RB-01 was identified as a rinsate. No metal contaminants were found in this blank with the following exceptions:

Rinsate ID	Analyte	Concentration (ug/L)
FW-RM-RB-01	Barium Chromium Lead	0.94 1.1 3.7

USFWS Roxanna Marsh
Metals - Data Qualification Summary - SDG 920839

SDG	Sample	Analyte	Flag	A or P	Reason
920839	FW-RM-15-SS FW-RM-10-SS FW-RM-12-SS FW-RM-16-SS FW-RM-02-SS FW-RM-06-SS FW-RM-05-SS FW-RM-17-SS FW-RM-07-SS FW-RM-08-SS FW-RM-09-SS FW-RM-01-SS FW-RM-04-SS FW-RM-03-SS FW-RM-08-CS-2.3-4.4 FW-RM-08-CS-1-2.3 FW-RM-09-CS-1-3.5 FW-RM-09-CS-3.5-4.9 FW-RM-17-CS-0-1.5 FW-RM-17-CS-1.5-3.5	Lead	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicates (%R)
920839	FW-RM-15-SS FW-RM-10-SS FW-RM-12-SS FW-RM-16-SS FW-RM-02-SS FW-RM-06-SS FW-RM-05-SS FW-RM-17-SS FW-RM-07-SS FW-RM-08-SS FW-RM-09-SS FW-RM-01-SS FW-RM-04-SS FW-RM-03-SS FW-RM-08-CS-2.3-4.4 FW-RM-08-CS-1-2.3 FW-RM-09-CS-1-3.5 FW-RM-09-CS-3.5-4.9 FW-RM-17-CS-0-1.5 FW-RM-17-CS-1.5-3.5	Mercury	J (all detects)	A	Matrix spike/Matrix spike duplicates (%R)

USFWS Roxanna Marsh
Metals - Laboratory Blank Data Qualification Summary - SDG 920839

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: USFWS Roxanna Marsh

Collection Date: March 19 through March 20, 2002

LDC Report Date: June 6, 2002

Matrix: Soil/Water

Parameters: Metals

Validation Level: EPA Level IV

Laboratory: En Chem Laboratories, Inc.

Sample Delivery Group (SDG): 920866A

Sample Identification

FW-RM-11-SS
FW-RM-03-CS-2.3-4.8
FW-RM-03-CS-0.8-2.3
FW-RM-20-SS
FW-RM-14-SS
FW-RM-21-SS
FW-RM-19-SS
FW-RM-18-SS
FW-RM-13-SS
FW-RM-RB-02
FW-RM-07-CS-2.6-5.4
FW-RM-07-CS-0.5-2.6
FW-RM-20-CS-0.8-2.4
FW-RM-21-CS-3.6-5.6
FW-RM-01-CS-3.6-5.6
FW-RM-21-CS-7.0-9.0
FW-RM-01-CS-7.0-9.0
FW-RM-03-CS-2.3-4.8MS
FW-RM-03-CS-2.3-4.8MSD
FW-RM-01-CS-1-2
FW-RM-01-CS-2-3.9

Introduction

This data review covers 20 soil samples and one water sample listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Methods 6010 and 7000 for Metals. The metals analyzed were Arsenic, Barium, Cadmium, Chromium, Lead, Mercury, Selenium, and Silver.

This review follows a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review (February 1994) as there are no current guidelines for the methods stated above.

A table summarizing all data qualification flags is provided at the end of this report. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from specified protocols or is of technical advisory nature.

Blanks are summarized in Section III.

Field duplicates are summarized in Section XIII.

The following are definitions of the data qualifiers:

U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.

J Indicates an estimated value.

R Quality control indicates the data is not usable.

N Presumptive evidence of presence of the constituent.

UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.

A Indicates the finding is based upon technical validation criteria.

P Indicates the finding is related to a protocol/contractual deviation.

None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

II. Calibration

An initial calibration was performed.

The frequency and analysis criteria of the initial calibration verification (ICV) and continuing calibration verification (CCV) were met.

III. Blanks

Method blanks were reviewed for each matrix as applicable.

Data qualification by the initial, continuing and preparation blanks (ICB/CCB/PBs) was based on the maximum contaminant concentration in the ICB/CCB/PBs in the analysis of each analyte. No contaminant concentrations were found in the initial, continuing and preparation blanks.

IV. ICP Interference Check Sample (ICS) Analysis

The frequency of analysis was met.

The criteria for analysis were met.

V. Matrix Spike Analysis

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
FW-RM-03-CS-2.3-4.8MS/MSD (All soil samples in SDG 920866A)	Lead	74.4 (75-125)	-	-	J (all detects) UJ (all non-detects)	A

VI. Duplicate Sample Analysis

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable.

VII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

VIII. Internal Standard (ICP-MS)

ICP-MS was not utilized in this SDG.

IX. Furnace Atomic Absorption QC

Graphite furnace atomic absorption was not utilized in this SDG.

X. ICP Serial Dilution

ICP serial dilution was not required by the method.

XI. Sample Result Verification

All sample result verifications met validation criteria.

XII. Overall Assessment of Data

Data flags have been summarized at the end of this report.

XIII. Field Duplicates

Samples FW-RM-21-SS and FW-RM-13-SS, samples FW-RM-21-CS-3.6-5.6 and FW-RM-01-CS-3.6-5.6, and samples FW-RM-21-CS-7.0-9.0 and FW-RM-01-CS-7.0-9.0 were identified as field duplicates. No metals were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD
	FW-RM-21-SS	FW-RM-13-SS	
Arsenic	27	30	11
Barium	250	290	15
Cadmium	13	13	0
Chromium	160	180	12
Lead	790	1000	23
Mercury	1.5	1.4	7

Analyte	Concentration (mg/Kg)		RPD
	FW-RM-21-SS	FW-RM-13-SS	
Selenium	10	15	40
Silver	6.1	4.0	42

Analyte	Concentration (mg/Kg)		RPD
	FW-RM-21-CS-3.6-5.6	FW-RM-01-CS-3.6-5.6	
Arsenic	5.3	12	77
Barium	100	150	40
Cadmium	0.92	2.4	89
Chromium	23	41	56
Lead	36	99	93
Mercury	0.049	0.079	47

Analyte	Concentration (mg/Kg)		RPD
	FW-RM-21-CS-7.0-9.0	FW-RM-01-CS-7.0-9.0	
Arsenic	1.9	3.3	54
Barium	86	85	1
Cadmium	0.63	0.43	38
Chromium	21	21	0
Lead	11	11	0
Mercury	0.036	0.031	15

XIV. Field Blanks

Sample FW-RM-RB-02 was identified as a rinsate. No metal contaminants were found in this blank with the following exceptions:

Rinsate ID	Analyte	Concentration (ug/L)
FW-RM-RB-02	Barium Chromium	0.38 0.88

USFWS Roxanna Marsh
Metals - Data Qualification Summary - SDG 920866A

SDG	Sample	Analyte	Flag	A or P	Reason
920866A	FW-RM-11-SS FW-RM-03-CS-2.3-4.8 FW-RM-03-CS-0.8-2.3 FW-RM-20-SS FW-RM-14-SS FW-RM-21-SS FW-RM-19-SS FW-RM-18-SS FW-RM-13-SS FW-RM-07-CS-2.6-5.4 FW-RM-07-CS-0.5-2.6 FW-RM-20-CS-0.8-2.4 FW-RM-21-CS-3.6-5.6 FW-RM-01-CS-3.6-5.6 FW-RM-21-CS-7.0-9.0 FW-RM-01-CS-7.0-9.0 FW-RM-01-CS-1-2 FW-RM-01-CS-2-3.9	Lead	J (all detects) UJ (all non-detects)	A	Matrix spike/Matrix spike duplicates (%R)

USFWS Roxanna Marsh
Metals - Laboratory Blank Data Qualification Summary - SDG 920866A

No Sample Data Qualified in this SDG

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: USFWS Roxanna Marsh

Collection Date: March 19 through March 21, 2002

LDC Report Date: June 6, 2002

Matrix: Soil

Parameters: Metals

Validation Level: EPA Level IV

Laboratory: En Chem Laboratories, Inc.

Sample Delivery Group (SDG): 920866B

Sample Identification

FW-RM-10-CS-1.7-4.0	FW-RM-10-CS-1.7-4.0MS
FW-RM-10-CS-0.7-1.7	FW-RM-10-CS-1.7-4.0MSD
FW-RM-13-CS-3.1-6.0	
FW-RM-13-CS-1.0-3.1	
FW-RM-20-CS-2.4-4.2	
FW-RM-20-CS-4.2-6.0	
FW-RM-15-CS-3.0-4.6	
FW-RM-15-CS-1.2-3.0	
FW-RM-12-CS-2.3-5.3	
FW-RM-12-CS-1.1-1.9	
FW-RM-04-CS-2.7-4.8	
FW-RM-04-CS-0.5-2.7	
FW-RM-05-CS-3.3-5.9	
FW-RM-05-CS-0.7-3.3	
FW-RM-02-CS-2.7-5.2	
FW-RM-02-CS-0.8-2.7	
FW-RM-19-CS-2.0-4.0	
FW-RM-19-CS-0.7-2.0	
FW-RM-18-CS-0.7-2.3	
FW-RM-18-CS-2.3-4.3	